Question Bank On STATISTICS

RAKESH GOEL



Question Bank on Statistics



NIPA $_{\odot}$ GENX ELECTRONIC RESOURCES & SOLUTIONS P. LTD. New Delhi-110 034

About the Author



Rakesh Goel, M.Phil (Statistics), Assistant Professor, Department of Animal Genetics and Breeding, College of Veterinary Science and Animal Husbandry, U.P. Pandit Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go-Anusandhan Sansthan, Mathura, has more than 30 years of teaching and research experience in the field of Computer & Biostatistics. He is associated with the research

activities of the students, teachers and research scholars of Veterinary and Animal Sciences, Medical Sciences, Agricultural Sciences and Animal Biotechnology. He has also organized several computer trainings.. He is also the author of "Statistics and Computers for Animal and Veterinary Sciences" written to meet the requirements of the undergraduate students of Veterinary and Animal Science, Animal Biotechnology and other related fields.

Question Bank on Statistics

Rakesh Goel

Assistant Professor
Department of Animal Genetics and Breeding
College of Veterinary Science and Animal Husbandry
U.P. Pandit Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya
Evam Go-Anusandhan Sansthan
Mathura, Uttar Pradesh



NIPA® GENX ELECTRONIC RESOURCES & SOLUTIONS P. LTD.

New Delhi-110 034



NIPA GENX ELECTRONIC RESOURCES & SOLUTIONS P. LTD.

101,103, Vikas Surya Plaza, CU Block L.S.C.Market, Pitam Pura, New Delhi-110 034 Ph: +91 11 27341616, 27341717, 27341718 E-mail:newindiapublishingagency@gmail.com

www: www.nipabooks.com

For customer assistance, please contact

Phone: +91-11-27 34 17 17 Fax: +91-11-27 34 16 16

E-Mail: feedbacks@nipabooks.com

© 2023, Publisher

ISBN: 978-81-19002-23-8

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, including electronic, mechanical, photocopying recording or otherwise without the prior written permission of the publisher or the copyright holder.

This book contains information obtained from authentic and highly reliable sources. Reasonable efforts have been made to publish reliable data and information, but the author/s, editor/s and publisher cannot assume responsibility for the validity, accuracy or completeness of all materials or information published herein or the consequences of their use. The work is published with the understanding that the publisher and author/s are not attempting to render any professional services. The author/s, editor/s and publisher have attempted to trace and acknowledge the copyright holders of all material reproduced in this publication and apologize to copyright holders if permission and/or acknowledgements to publish in this form have not been taken. If any copyrighted material has not been acknowledged, please write to us and let us know so that we may rectify the error, in subsequent reprints.

Trademark Notice: NIPA, the NIPA logos and their presentations (the way they are written/ presented) in this book are the trademarks of the publisher and hence may not be used without written permission, if copied or used without authorization, the infringer will be prosecuted as per law.

NIPA® also publishes books in a variety of electronic formats. Some content that appears in print may not be available in electronic books, and vice versa

Composed and Designed by NIPA®.



उ.प्र.पं. दीनदयाल उपाघ्याय पशु चिकित्सा विज्ञान विश्वविद्यालय एवं गो अनुसंधान संस्थान, मथुरा-281001 (उ.प्र) U.P. Pandit Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go Anusandhan Sansthan (DUVASU) Mathura-281001 (U.P.)



प्रो.(डॉ.) ऐ.के. श्रीवास्तव कुलपति **Prof. (Dr.) A.K. Srivastava** Vice-Chancellor

Foreword

The present book entitled "Question Bank on Statistics" will meet the requirements of the under graduate students of Veterinary and Animal Sciences, Animal Biotechnology, Business Management, Agriculture, Medical and other related fields. The book is particularly written for the benefit of the students, preparing for various competitive exams like JRF, SRF, NET, State level, and other examinations.

I am sure that the book in its present form would also be of great help to researchers and teachers, particularly related to Agriculture, Biotechnology and Animal Sciences.

I appreciate the efforts made by the author in bringing out the book in present form

(A.K. Srivastava)

Preface

It's my pleasure to present the book, its being published with an aim to spread the knowledge attained by the undersigned in the vast teaching career as Statistician amongst the interested persons. There are manifold purposes of writing this book on the subject. Basically, it caters to the needs of the candidates aspiring for competitive examinations, and for the beginners to understand the intricacies of the subject.

It is observed that the very name of the subject, statistics evokes fear in the minds of the students, through this book an effort has been made to dispel that fear and students should be able to approach the subject confidently. It should be learning with pleasure for the students and they should face the competitions any time and at any place with confidence. The latest trend of education is the teaching through multiple choice questions. The MCQ's in this book are intended to enable students to prioritize and plan their learning through regular practicing.

Statistics has assumed a lot of importance in recent times. It is imperative for every student to study and gain knowledge of statistics, its uses as well as its applications. The format and contents of this book has been carefully drafted, the Chapters have been written with a view to explain the concepts clearly and examples have been given in the text to help the students to understand the application of these concepts in real life situations. MCQs at the end of every unit will help the students to make a self-assessment of the knowledge assimilated by going through the Chapters. Through this book, the author has made an effort to provide rationale for the solutions. The book, therefore, meets the expectations of the students as it answers the demand and the quest in their mind and give rise to real learning which would stand in good stead for the student's career and his life.

The quality of the MCQs presented in this book stands out from the other books available in the market. Speciality of this book is that there are varieties of MCQs which comprehend all the related questions on the subjects as well the contents have been so designed as to include in the true spirit of the syllabus of basics of statistics.

Entire syllabus of statistics is divided into Chapters, and another innovation in this book is that each Chapter is divided into various sections, sub-sections and headings. The book is user-friendly and provides information in a well structured manner. It provides comprehensive and critical study of the various concepts of the subject matter.

It is felt that the contents should be crystal clear and efforts are made to ensure this however a word or suggestion from reader's side may add another feather to the cap of the subject matter of the book. The author looks forward to the comments, suggestions and criticism from the readers. Constructive suggestions and feedback from users would be highly appreciated, gratefully acknowledged and suitably incorporated.

The author is highly obliged to his wife Mrs. Namita Goel and daughter Miss Priya Goel for keeping patience and moral support.

Author would like to take this opportunity to thank Prof. (Dr.) A.K. Srivastava, the Honorable Vice Chancellor, Uttar Pradesh Pandit Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go-Anusandhan Sansthan, Mathura along with Prof. (Dr.) P. K. Shukla, Dean, Veterinary College and other faculty members of the University.

With best wishes.

Author

Contents

Fore	eword	<i>v</i>
Pref	âce	vii
1.	Statistics: An Introduction	1
2.	Classification and Tabulation	20
3.	Sampling Theory	62
4.	Diagrammatic and Graphical Presentation of Data, Skewness, Moments and Kurtosis	93
5.	Measure of Central Tendency	.122
6.	Measure of Dispersion	.162
7.	Correlation and Regression	.203
8.	Probability Theory	.237
9.	Theoretical Probability Distribution	.304
10.	Time Series Analysis	.332
11.	Index Numbers	.360
12.	Statistical Inference and Tests of Hypothesis	.383
13.	Design of Experiment.	.418
14.	Non-parametric Tests	.440
15.	Vital Statistics	.449

Question Bank On STATISTICS

The book has been written according to the concepts of statistical methods and inferences to the students which would help them in understanding the importance of statistics. The book will help to prepare for various competitive exams like JRF, SRF, NET, state level, and other government exams, etc.

MCQs is one of the best ways to test a student's comprehension of a concept. This book is prepared for Statistics MCQs based on current trends and practices.

The book would be very useful for the students, researchers and teachers of SAU's / ICAR / Biotechnology institutes / Management / Medical and helpful for the preparation of various competitive examinations.

Rakesh Goel: (Statistics), Assistant Professor, Department of Animal Genetics and Breeding, College of Veterinary Science and Animal Husbandry, U.P. Pandit Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go-Anusandhan Sansthan, Mathura, Uttar Pradesh



NIPA_®GENX ELECTRONIC RESOURCES & SOLUTIONS P. LTD.

101,103, Vikas Surya Plaza, CU Block L.S.C.Market, Pitam Pura, New Delhi-110 034 Ph:+91 11 27341616, 27341717, 27341718 E-mail:newindiapublishingagency@gmail.com www: www.nipabooks.com

